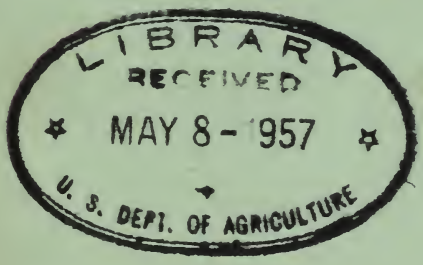
FOURTEENTH INTERNATIONAL DAIRY CONGRESS

Held at Rome, Italy, September 24-28, 1956

REPORT OF

THE DELEGATION OF THE UNITED STATES

TO THE SECRETARY OF STATE



UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Animal Husbandry Research Division
Beltsville, Maryland

LETTER OF SUBMITTAL

The Honorable
The Secretary of State

Dear Mr. Secretary:

We have the honor to submit herewith a report of the participation in the Fourteenth International Dairy Congress by the delegates representing the Government of the United States.

The Congress was held in Rome, Italy, September 24-28, 1956, and the delegates of the United States to the Congress were designated under the authority of the President by the Department of State on September 7, 1956, pursuant to an invitation from the Government of Italy to the Government of the United States to participate in this Dairy Congress. The appointments were transmitted to us by you.

The report herewith summarizes the work of the Congress and gives a brief account of the participation by delegates and individuals from the United States.

Respectfully submitted.

R. E. Hodgson, Chairman
W. Raymond Ogg, Secretary

March 20, 1957

CONTENTS

FOURTEENTH INTERNATIONAL DAIRY CONGRESS

Rome, Italy, September 24-28, 1956

REPORT OF THE UNITED STATES DELEGATION

BACKGROUND

The Fourteenth International Dairy Congress was held in Rome, Italy, September 24-28, 1956. The Congress was organized by the Italian National Committee of the International Dairy Federation, with the approval of the Italian Government and under the patronage of the Honorable Giovanni Gronchi, President of the Republic of Italy.

The International Dairy Federation, organized in 1903 for the purpose of promoting the solution of local and international scientific, technical and economic problems relating to dairying in the interest of humanity as a whole, sponsors the International Dairy Congresses. The Federation studies economic questions solely from the standpoint of technical and applied science. Its work is not influenced by commercial or political considerations. The Federation accomplishes its objectives through nine special commissions which are its main technical working instrument. As one additional means of achieving its objectives, the Federation organizes International Dairy Congresses for the purpose of holding forums for the exchange of technical and applied knowledge on dairy science.

Congresses are held about every three years, and are organized and put on by an organizing committee in one of the countries that is a member of the International Dairy Federation. There are 23 countries presently maintaining membership in the International Dairy

Federation. They are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Federal Republic of Germany, Great Britain, India, Ireland, Israel, Italy, Luxembourg, Netherlands, Portugal, Norway, New Zealand, Spain, Sweden, and Switzerland. Japan and the Union of Soviet Socialist Republics were accepted as members at the annual meeting of the Federation in Rome September 17-22, 1956. In some instances, the governments of the countries named maintain the membership in the Federation. In other instances an association of commercial groups in a country constitutes a national committee that maintains the membership in the Federation. The headquarters office of the International Dairy Federation is maintained at Brussels, Belgium.

The first International Dairy Congress was held at Brussels, Belgium, at the time the International Dairy Federation was founded in 1903. Data relating to this and subsequent Congresses are shown in the following table:

Congress	Place	Date	Sections	Papers	Countries officially represented	Number of participants
I	Brussels	Sept. 8-11, 1903	3	57	16	700
II	Paris	Oct. 16-19, 1905	6	48	17	1,170
III	The Hague	Sept. 16-20, 1907	3	60	21	900
IV	Budapest	June 6-11, 1909	3	67	20	1,020
V	Stockholm	June 28-July 1,1911	2	52	23	900
VI	Berne	June 8-10, 1914	4	54	28	894
VII	Paris	May 16-19, 1926	7	78	27	1,500
VIII	London	June 26-July 12, 1928	7	92	-	1,980
IX	Copenhagen	July 13-17, 1931	5	145	52	2,092
X	Rome/Milan	April 30-May 6,1934	7	213	-	2,600
XI	Berlin	Aug. 22-28, 1937	4	413	53	3,638
XII	Stockholm	Aug. 15-19, 1949	6	416	60	2,190
XIII	The Hague	June 22-26, 1953	5	327	38	2,090
XIV	Rome	Sept. 24-28, 1956	3	451	53	2,653

RELATION OF UNITED STATES DAIRY INDUSTRY TO INTERNATIONAL DAIRY CONGRESS

The United States has never been a member of the International Dairy Federation. On three occasions in the past 25 years the American Dairy Science Association has declined invitations to membership. In spite of the non-membership status of the United States, dairy scientists of this country have attended all of the International Dairy Congresses held and this government has sent official delegations to all Congresses beginning with the Eighth in 1928. This official representation has been made possible by reason of the fact that the government of the host country organizing each Congress has made it a practice to tender the Government of the United States, along with governments of other non-member countries, an invitation to attend and participate in the Congress.

In addition to the International Dairy Congresses listed above, a similar Congress was held in the United States in 1923 at Washington, D. C., Philadelphia, Pa., and Syracuse, N. Y. Many of the nations that are members of the International Dairy Federation sent official delegations to the 1923 Congress.

There is a persistent desire on the part of the officers of the International Dairy Federation to have the United States maintain a membership in the Federation. To this end, this organization requested a hearing with the official United States Delegation during its attendance at the Fourteenth International Dairy Congress meeting in Rome, at which time they invited the delegation to consider further the possibilities of becoming members of the Federation. In response to this request, the United States Delegation indicated that the International Dairy Federation's invitation for membership would be considered. There appears to be an interest on the part of some groups of the dairy industry in the United States in becoming affiliated with this international body, and the desirability of such affiliation is presently being studied by these groups.

PARTICIPATION OF THE UNITED STATES IN THE FOURTEENTH INTERNATIONAL DAIRY CONGRESS

On July 3, 1956, the Italian Government extended an invitation to the United States Government to send delegates to take part in the Fourteenth International Dairy Congress, which was to be held at Rome, Italy, September 24-28, 1956. This invitation, transmitted to the

Secretary of State from the Italian Ambassador on behalf of the Italian Government, was referred to the Secretary of Agriculture who recommended to the Secretary of State that an official delegation be appointed to attend the Fourteenth International Dairy Congress. This invitation was accepted by the Department of State on July 30, 1956. Liasion contact was established between representatives of this Government and the Italian Organizing Committee for achieving United States participation in the Congress.

Official Delegates of the United States of America to the Fourteenth International Dairy Congress

Upon recommendation of the Secretary of Agriculture, the following delegates were named by the Secretary of State to represent the United States at the Fourteenth International Dairy Congress, Rome, Italy:

Dr. Ralph E. Hodgson, Chief, Dairy Husbandry Research Branch, Agricultural Research Service, U. S. Department of Agriculture, Beltsville, Md., who also acted as chairman of the delegation.

W. Raymond Ogg, Agricultural Attache, The American Embassy, Rome, Italy, who also acted as secretary of the delegation.

Clarence J. Babcock, Director, Dairy and Poultry Division, Foreign Agricultural Service, U. S. Department of Agriculture, Washington, D. C.

A. Morelle Cheney, Secretary, Dairymen's League Cooperative Association, Inc., New York, N. Y.

Bernt I. Christensen, Meridale Dairies, New York, N. Y.

Chester K. Enstrom, President, Jones-Enstrom Ice Cream Company, Grand Junction, Colorado.

Herbert L. Forest, Director, Dairy Division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C.

Kenneth E. Geyer, Manager, Connecticut Milk Producers Association, Hartford, Connecticut.

Dr. Ira A. Gould, Chairman, Department of Dairy Technology, College of Agriculture, Ohio State University, Columbus, Ohio.

David M. Gwinn, President, Pennbrook Milk Company, Philadelphia, Pennsylvania.

T. Kline Hamilton, President, Diamond Milk Products, Inc., Columbus, Ohio

Patrick B. Healy, Assistant Secretary, National Milk Producers Federation, Washington, D. C.

Herbert B. Henderson, Chairman, Dairy Division, University of Georgia, Athens, Georgia.

Milton Carl Hult, President, National Dairy Council, Chicago, Illinois.

Dr. Eugene L. Jack, Head, Department of Dairy Industry, University of California, Davis, California.

William H. E. Reid, Dairy Husbandry Department, University of Missouri, Columbia, Missouri.

Paul E. Reinhold, Chairman of the Board, Foremost Dairies, Jacksonville, Florida.

Robert Rosenbaum, David Michael Company, Philadelphia, Pennsylvania.

Dr. Alfred O. Shaw, Head, Department of Dairy Science, Washington State College, Pullman, Washington.

Dr. George Malcolm Trout, Dairy Department, Michigan State University, East Lansing, Michigan.

All delegates except Patrick B. Healy and Paul E. Reinhold were in attendance at all sessions of the Congress.

Individuals from the United States of America Who Attended the Fourteenth International Dairy Congress

In addition to the official delegates representing the United States, a number of representatives of State and commercial dairy organizations and State Agricultural Colleges and State Experiment Stations and individuals attended the Congress. The following is a list of those individuals who were registered at the Congress:

L. H. Burgwald, Foreign Agricultural Service, U. S. Department of Agriculture, Washington, D. C.
Mrs. B. I. Christensen, New York, N. Y.
C. D. Dahle, State College, Pennsylvania.
Mrs. Vernie E. Enstrom, Grand Junction, Colorado.
Mrs. Anna D. Forest, Washington, D. C.
Miss Anna K. Forest, Washington, D. C.
Mrs. Genevieve M. Gould, Columbus, Ohio
N. S. Golding, 1603 Maple Ave., Pullman, Washington
E. M. Harmon, International Cooperation Administration, Terehan, Iran
Mrs. Elizabeth B. Gwinn, Philadelphia, Pennsylvania.
Mrs. Vivian F. Hamilton, Columbus, Ohio
Mrs. Ruth Hult, Chicago, Illinois
Mrs. Eugene Jack, Davis, California
R. B. Kocher, Madison, Wisconsin
Mrs. R. B. Kocher
Mrs. Gwendolyn A. Stahl
J. A. Knudsen, Central Milk Products Co., Wellsboro, Pa.
Mrs. Helen Knudsen, Wellsboro, Pa.

J. Metzger, Dannon Milk Prod. Inc., Long Island City 1, N. Y.

J. Nonnamaker, Pure Milk Association, Chicago, Ill.

Mrs. J. Nonnamaker

Mrs. Erna Lester

Mrs. Rose Baker Reid, Columbia, Missouri

Mrs. Madeline Rosenbaum, Philadelphia, Pennsylvania

Miss Ruth Rosenbaum

Paul Rosenbaum

D. R. Strobel, Foreign Agricultural Service, U. S. Department of Agriculture, Washington, D. C.

C. F. Weinreich, Cherry-Burrell Corporation, 427 West Randolph St., Chicago, Illinois.

COUNTRIES PARTICIPATING IN THE FOURTEENTH INTERNATIONAL DAIRY CONGRESS

The following countries, Colonies, States, and Organizations were represented at the Fourteenth International Dairy Congress:

Country[1]	Registered Participants[2]	Country[1]	Registered Participants[2]
Argentina	1	Luxemburg*	12
Australia*	26	Malta	2
Austria*	80	Norway*	54
Belgium*	70	New Zealand	8
Canada*	14	Netherlands*	134
Czechoslovakia	4	ONU/FAO/WHO/UNICEF/ OEEC	30
Chile	1	Pakistan	2
Cyprus	2	Poland	6
Denmark*	258	Portugal*	11
Egypt	1	Spain*	57
Finland*	52	Vatican State	1
France*	232	Sweden*	145
Republic of West Germany*	274	Switzerland*	105
Japan*	12	Tunisia	1
India*	15	Hungary	4
Great Britain*	290	Union of South Africa	1
Ireland*	36	Uruguay	2
Israel*	14	United States	38
Italy*	259	Venezuela	1
Yugoslavia	2		
Kenya	5	Total 40	2,262

1/ Asterisk indicates country is member of International Dairy Federation.

2/ Registration as of August 31, 1956.

ORGANIZATION OF THE FOURTEENTH INTERNATIONAL DAIRY CONGRESS

As mentioned in the background statement, the Fourteenth International Dairy Congress was organized by the Italian National Committee of the International Dairy Federation, known as the Italian Committee of Milk and Milk Products. The following organizations participated in forming this committee:

1. Associazione Italiana Allevatori, Rome.
2. Associazione Italiana Lattiero-Casearia, Milan.
3. Associazione Nazionale Grossisti Stagionatori Caseari, Milan.
4. Confederazione Generale Agricoltura Italiana, Rome.
5. Confederazione Nazionale Coltivatori Diretti, Rome.
6. Federazione Nazionale Cooperative Lavorazione Transformazione Prodotti Agricoli, Rome.

The general organizing committee consisted of 65 individuals prominent in Italian agriculture and related activities and officers of the International Dairy Federation. In addition, an Honorary Committee of 54 members, including individuals prominent in Italian public affairs and agriculture and the President of the International Dairy Federation, was established to guide the organizational activities.

The Honorable E. Colombo, Minister of Agriculture and Forestry, served as Chairman of the General Organizing Committee. The work of organizing the Congress was under the direction of an Executive Committee. Prof. S. Visco, Director, National Nutrition Institute and President, Italian Milk and Dairy Products Committee, served as Chairman of this Executive Committee. Dr. G. Pittoni, Chief Superintendent, Ministry of Agriculture & Forestry, served as Secretary-General of the Executive Committee and as Secretary-General of the Dairy Congress.

THE TECHNICAL PROGRAM

The Congress was organized for the sole purpose of presenting and discussing technical, economic and trade information on dairying throughout the world with the objective of improving its efficiency and effectiveness in providing food to the people. There were no committees of the Congress itself except for the officers of the various sections who formulate statements and recommendations for the consideration of the Congress members assembled.

The Congress was held in the F.A.O. building in Rome. The excellent facilities and services available provided a comfortable environment, including simultaneous translation of the proceedings in five languages. The official languages were English, French, German, Spanish, and Italian. The technical program was organized into an open general session, a closing general session, three conference sessions, and eighteen subject matter sessions under three sections. The program schedule is as follows:

1. Opening Ceremony - Prof. S. Visco, Chairman, presiding.
2. Section I - Milk for Liquid Consumption - Prof. H. D. Kay, Great Britain, Chairman - 7 subject matter sessions.
3. Section II - Dairy products, technical and economic problems - Dr. A. M. Guerault, France, Chairman - 6 subject matter sessions.
4. Section III - Legislation, control, analysis methods Prof. P. Kaestli, Switzerland, Chairman - 5 subject matter sessions.
5. Conference I - Subject - The position of the milk industry in national economy - P. Albertario, Italy, speaker.
6. Conference II - Subject - The provision in hot countries of a sufficient supply of milk particularly in relation to milk-producing animals - cows, buffalo, sheep, goats - F. Viera De Sá, Portugal, speaker.
7. Conference III - Subject - Effective and controlled use of surplus dairy products - A. H. Boerma, F.A.O., speaker.
8. Closing Ceremony - Prof. S. Visco, Chairman, presiding.

A chairman, three vice-chairmen, and a secretary were assigned to conduct the presentation of the material in each subject of the three sections. A general reporter was assigned to each subject in the various sections. He prepared a brief review of the subject under discussion, based on a study of the contributions and on his personal experience, which included a summary of the most important developments during the past few years and concluded with recommendations. At least two discussion leaders were assigned to each subject to open the discussion from the floor following the general report. These discussions usually were thorough and interesting. The discussions, along with those of the discussers and the reports of the reporters, were fully documented along with the papers, and are included in the printed proceedings of the Congress.

In addition to the addresses given at the general opening

and closing sessions and the conference lectures, there were 451 scientific and technical papers on the various aspects of dairying that are included in more than 5,000 printed pages of the official proceedings.

Participation of United States Delegates in Technical Program

There were 25 technical papers prepared by scientists of the United States on various topics that are included in the proceedings. Several delegates served in different capacities during the progress of the session programs and discussions. This activity is summarized as follows:

1. Dr. I. A. Gould - Vice-Chairman, Section II, Dairy products, technical and economic problems.
2. Mr. H. L. Forest, Reporter, Section III, Subject 1, International trade in dairy products.
3. Mr. T. K. Hamilton, Discusser, Section I, Subject 2, The planning and management of dairies processing milk for liquid consumption.
4. Dr. R. E. Hodgson, Discusser, Section I, Subject 4, The effect of different types of modern processing on the nutritive value of liquid milk.
5. Prof. H. B. Henderson, Discusser, Section I, Subject 6, The assessment of the cost of producing, processing and distributing various types of milk for liquid consumption.
6. Mr. Milton Hult, Discusser, Section I, Subject 7, The position of milk as an article of diet in various countries, together with methods for increasing liquid milk consumption.
7. Dr. E. L. Jack, Discusser, Section II, Subject 2, Various aspects of the relation of butter to other fats used for human consumption.
8. Mr. C. J. Babcock, Discusser, Section III, Subject 4, The organization of the control of quality of dairy products.

In addition, various delegates freely and frequently entered into discussions of various subjects during the discussion periods. In this way they were able to bring to the listeners the knowledge and experiences gained in this country.

The U. S. Embassy, and especially the Agricultural Attache, Mr. W. R. Ogg, Secretary of the delegation, and his staff, were of invaluable assistance to the delegation members in connection with their participation in the Congress program.

The Embassy made available for the use of the delegation a conference room and clerical help. Meetings were held by the delegation before the Congress opened and twice during the course of the meetings for the purpose of planning and guiding the activities of the delegates to obtain the most effective coverage and participation.

EVENTS OF INTEREST

United States Delegation Luncheon for Members of the Italian Organizing Committee, Officials of F.A.O. and Officers of the International Dairy Federation

Through the assistance of the Department of State and with the great help of the U. S. Embassy officials at Rome, the United States Delegation sponsored a luncheon in honor of the members of the Italian Organizing Committee, officials of F.A.O., and the officers of the International Dairy Federation. This luncheon was well attended by the invited guests and was a most successful affair. It gave all members of the delegation an opportunity to meet and exchange ideas with these important people. At this luncheon the delegation was honored to have Minister Counselor John D. Jernegan, as a representative of Ambassador Clare Booth Luce, speak to the group and express to the representatives of these organizations the appreciation of the United States Government for the opportunity offered Americans to participate in the Congress. President R. Mork of the International Dairy Federation spoke in appreciation for the honor of the luncheon and indicated the importance to the success of the conference of having a strong representation from the United States. The Honorable A. Capua, Under Secretary of Agriculture, and representing the Minister, the Honorable E. Colombo, responded. Included in his remarks was a statement which he read in behalf of the Minister highly commending the United States' program of making available cheese and powdered milk to Italy and other countries and expressing the hope that exports of Italian type cheeses to the United States and elsewhere can be increased. In noting the increased milk consumption everywhere, he further stated that this imposes upon governments the need for a watchful eye in this field so that milk and its byproducts may flow throughout the world more freely and abundantly.

The names of the people, other than the U. S. delegates, who attended this luncheon are as follows:

International Dairy Federation Officials

Prof. R. Mork, President (Norway)
Prof. P. Kaestli, First Vice-President (Switzerland)
Prof. A. M. Guerault, Second Vice-President (France)
Mr. J. Le Corbesier, General Secretary (Belgium)
Prof. H. D. Kay, Chairman, Study Commission (Great Britain)

Food and Agriculture Organization

Sir Herbert Broadley, Deputy Director General
Mr. K. V. L. Kosteven, Chief, Animal Production Branch, Agriculture Division
Mr. Hans Pederson, Agriculture Division
Dr. G. Blau, Chief, Commodities Branch, Economics Division
Mr. T. Eastwood, Chief, Commodities Branch, Economics Division

American Embassy

Mr. John D. Jernegan, Minister Counselor
Mr. W. R. Ogg, Agricultural Attache
Mr. H. K. Ferguson, Assistant Agricultural Attache
Mr. Earl S. Fox, Assistant Agricultural Attache
Mr. John Koppel, Political Section

Italian Organizing Committee

The Honorable Emilio Colombo (represented by Undersecretary of Agriculture Capua), Minister of Agriculture & Forests, Italian Ministry of Agriculture, Rome
Dr. G. Pittoni, Inspector, Italian Ministry of Agriculture & Forests
Prof. S. Visco, Director, National Nutritional Institute, President, Italian Committee for Milk and Byproducts
Prof. Vittorio De Simone, Chief, Livestock Section, Italian Ministry of Agriculture & Forests
The Honorable Prof. P. Germani, President of the Parliamentary Commission for Agriculture
The Honorable Paolo Bonomi, President, Italian Confederation of Direct Cultivators
Comm. Romualdo Ottogalli, President, Butter Section of Organizing Committee
Dr. T. Corsini (represented by Cav. De Stefani Dara) President, Italian Association of Breeders
Dr. N. Costa (represented by Mr. L. Mizzi, Director General) President, Italian Federation of Agrarian Consortia
Dr. A. Gastani d'Oriseo (represented by Count Giorgio Brenciaglia) President, Italian General Confederation of Agriculture
Comm. F. Locatelli, Vice-President, Italian Committee for Milk and Byproducts
Prof. M. Scapaccino, Director General, Direction General for Agricultural Production, Italian Ministry of Agriculture & Forests

Receptions and Entertainment for Visiting Delegates

An official reception with refreshments for delegates and other participants was held in the Terme di Diocleziano on the evening of September 24. This reception was well attended.

On September 26 the Organizing Committee gave a dinner in honor of the collaborators of the Congress at the Casino Valadier (Pinico). About 150 people, including 3 U. S. delegates, attended this dinner.

On September 26 the Honorable Emilio Colombo, Minister of Agriculture, held a reception for Congress officers, liasion representatives, and other personalities participating in the Congress. This was attended by about 1,000 guests.

On September 27 the Organizing Committee held a reception and buffet supper in the Galleria Nazionale di Arte Moderna, Valle Giulia, for the entire Congress membership in honor of the closing of the Congress. About 3,000 guests attended.

A reception for the ladies present at the Congress was held on September 26.

An audience with His Holiness, Pope Pius XII, was held during the morning of September 27 at his summer residence, Castel Gandolfo. About 2,500 participants from 49 countries traveled by bus to the audience. In his address Pope Piux XII urged widespread use of milk as a gift of God. He praised the distribution of milk to school children and indicated the use of milk should be increased until all people and all generations can profit from this gift for the health of their bodies. After his formal address he mingled among and visited with the delegates.

United States Ambassador Luce's Reception for Delegates

On Tuesday, September 25, at 5 P.M., Ambassador Clare Booth Luce held a reception in the American Embassy for the delegates, their wives, and other Americans attending the Congress. This was a lovely occasion and those present appreciated the fact that the Ambassador took time from her busy schedule to meet and visit with them. Ambassador Luce commented on the importance of international meetings such as this Congress and wished the delegation success in their work at the sessions.

Tours and Special Events

A number of tours were offered by the Congress Organization during and after the Congress sessions. Four different half-day sightseeing tours of Rome took place during the 5 days of the Congress. Half-day tours to visit the Cesarina Farm, the Torre in Pietra Farm, the Buoncompagne Farm, the Tor Moncina Experimental Farm; two half-day tours to the Istia Milk Center; a one-day tour to La Fagianeria Dairy Farm; a one-day tour to Cerveteri Livestock and Fruit Farm; and a one-day tour to Tivoli were available during the course of the Congress sessions. Post-Congress tours combining visits to farming areas, dairy plants, and sightseeing were available to Naples, Capri, Pompeii, Paestrum, Sicily, Florence, and Florence-Milan-Turin. These tours varied in length from 2 to 8 days. Several members of the delegation attended various of these events.

Exhibitions

The Congress Organizing Committee developed two distinct exhibitions: (1) The Milk Village and (2) The Exhibition of International Propaganda, of Bibliography and of Poster Sketches on Milk and Milk Products.

The Milk Village - This exhibition, built especially for the Congress, was staged in an area in front of the F.A.O. buildings at the entrance of Passeggiata Archeologica.

The village was made up of pavilions built in such a way as to permit the arrangement of displays showing the entire process of:

(a) The various phases through which milk passes from production on the dairy farm to its processing for drinking purposes or for conversion into food or industrial products, and through distribution.

(b) The activities carried out by the public authorities and by various organizations and agencies in favor of milk and dairy products.

(c) The activities carried out by private enterprise or by associations in the way of processing milk for drinking, for converting it into dairy products, and for marketing milk and dairy products at home and abroad; this sector included a show of samples of the various products.

Inside the pavilion were stands which, although limited as to space, provided a meeting place for participants at the Congress to become acquainted with various new dairy products, or to bring their own information on the latest progress in the field of machinery and technique for milk processing up to date.

While this was mainly an Italian activity, the display had certain international aspects. In addition to the Italian, certain firms, especially from France, West Germany and Sweden, displayed equipment and processes for handling milk and dairy products. A special section was devoted to a sales display of milk and milk products. This exhibit was well done artistically and created much interest. The United States did not participate in this exhibit.

The other exhibition which was located in the Palazzo delle Esposizioni, Via Nazionale, consisted of 4 different exhibits. Some of these exhibits were in the nature of contests for which prizes of recognition were awarded by the Italian National Committee.

The Milk and Milk Products Propaganda Exhibit - This was an exhibit of Propaganda and Publicity on Milk and Milk Products, in which 15 different countries (Austria, Denmark, Finland, France, West Germany, Great Britain, India, Israel, Italy, Luxemburg, Norway, Netherlands, United States, Sweden, and Switzerland) submitted material used in their national programs for publicizing milk and milk products.

The National Dairy Council and the American Dairy Association jointly developed an exhibit utilizing their available material for the United States' entry. The outstanding cooperation of these organizations made possible effective United States participation in this event.

As a part of this exhibit 7 countries (Austria, West Germany, Italy, United Kingdom, Norway, Netherlands, and Sweden) submitted for competition a number of propaganda films. These films were shown to the public at regularly scheduled times during the course of the Congress. They were also judged by a jury and awards were given. Thirty propaganda films were entered and judged. The winning films were as follows:

Country	Title of Film	Recognition
Italy	The pasture of the sun	Cup of Presidency of Council of Ministers
Sweden	The river of life	The Ministry of Agriculture cup
W. Germany	The green meadow	Italian Milk Products Assn. cup
Sweden	Why more milk	National Nutrition Institute of the Nutritional Research Council cup
Sweden	Four good cheeses	The Italian Milk Committee's cup
Great Britain	Inheritance	The National Farmers Federation cup
Great Britain	The dairy round	The Rome Chamber of Commerce and Agriculture cup
W. Germany	In the bottom of nature	The Agricultural Confederation cup

The Propaganda Posters Exhibit - This exhibit was for the purpose of stimulating artists in the development of posters for use through advertising and other media to encourage the consumption of milk and dairy products. Eighteen countries (Austria, Belgium, Denmark, Finland, France, West Germany, Great Britain, India, Ireland, Italy, Luxemburg, Norway, New Zealand, Netherlands, Portugal, Spain, Sweden, and United States) submitted a total of 126 posters for this exhibit. The posters were first classified into 3 categories (milk as a beverage, butter and cheese, and all 5 milk products) and then appraised by a jury. The winning posters were as follows:

Liquid milk class:

First prize - Mr. Henri Dohet, Belgium	600,000 lire
Second prize - Mr. Jan Van Frausum, Belgium	300,000 lire
Third prize - Mr. Sunnar Rune, Sweden	100,000 lire

Butter and cheese class:

First prize - Mr. Peter Lem, Netherlands	600,000 lire
Second prize - Mr. Bjarne Moller, Norway	300,000 lire
Third prize - French Milk Committee	100,000 lire

All milk products class:

First prize - Mr. Artur Zelger, Austria	600,000 lire
Second prize - Mr. Jacob Grundt, Norway	300,000 lire
Third prize - Mr. Aldo Tappa, Italy	100,000 lire

Dairy Bibliography Exhibit - This exhibit was a collection of representative publications, periodicals, and books provided by different countries to show the type and extent of educational and technical material on dairying available to the students, scientists, and the public. Twenty-four countries (Austria, Australia, Belgium, Canada, Czechoslavakia, Denmark, Egypt, Finland, France, Great Britain, Holland, India, Israel, Italy, Luxemburg, New Zealand, Norway, United Nations-F.A.O., Portugal, Spain, Sweden, Switzerland, West Germany, and United States) submitted material for this exhibit. The United States submitted more than 500 pieces, including representative sample copies of bulletins, periodicals, books, scientific journals and journal reprints, magazines, and pamphlets in its exhibit. Unfortunately, only a few representative pieces were on display.

In relation to the exhibitions sponsored by the Italian National Committee, it is significant that U. S. delegate, Mr. Milton Hult, served on the two juries that judged the propaganda films and the propaganda posters. This activity took a great amount of his time before the opening and during the course of the Congress. In this capacity he rendered a great service to the National Committee and deserves the gratitude of the United States delegation and the United States Government.

THE INTERNATIONAL DAIRY CONGRESS SESSIONS

The Opening Session of the Congress

The Fourteenth International Dairy Congress was opened at a general session in the Conference Building of F.A.O. at 10.30 a.m. September 24. Prof. S. Visco, Chairman of the Italian National Committee, presided. In his opening remarks he set forth the overall value of milk and milk products in the nutrition of mankind and the value of dairying to agriculture and society. He mentioned the need for research to discover new facts that will advance dairying and promote human health and welfare.

Prof. R. Mork, President, International Dairy Federation, welcomed the participants and thanked the Italian Government, the Italian National Committee and F.A.O. for the plans, arrangements, and facilities that had been made available to handle the large attendance and to make the meetings pleasant and profitable. He made reference to Rome for its important place in history, in law, and in the development of the dairy industry.

Sir Herbert Broadley, Deputy Director, F.A.O., responded and complimented the International Dairy Federation and dairy

workers throughout the world for coming together in such great numbers for the purpose of exchanging knowledge and discussing mutual problems to advance the dairy industry.

Prof. S. Cramarossa, Director General of Medical Services, Board of Hygiene and Public Health, in his remarks emphasized the importance of milk in the diet and health of the people.

Mr. E. Colombo, Minister of Agriculture and Forestry, in addressing the audience mentioned the important place that dairy farming takes in the agricultural economy of many countries of the world. He recognized that methods of dairying are changing and will continue to change with human needs. He mentioned mechanization on the farm and changes in methods of processing and marketing milk and milk products. While he recognized that the world output of milk is more than 250 million tons, he said that as the standard of living improves and the world population increases, milk production will need to increase. He concluded by indicating the need for wise use and distribution of surplus dairy products.

The Closing Session of the Congress

The closing session of the Congress was held in the conference room of F.A.O. at 4.30 p.m. September 29. Chairman S. Visco presided. In his closing remarks Prof. Visco made an excellent summary of the work of the Congress, stressing the fine manner in which participants from many different lands worked together toward a common end. He encouraged the audience and associates to even greater efforts to advance the dairy industries, to improve the quantity and quality of milk and milk products for the benefit of the people of the world.

Prof. P. Kaestli, First Vice-President, International Dairy Federation, thanked Chairman Visco and Secretary-General Dr. G. Pittoni and their many associates for the excellent way in which the Congress was managed. Sir Herbert Broadley, Deputy Director, F.A.O., complimented the Congress on achieving their objectives in an effective manner.

The Honorable Jose Fieueres, President of Costa Rica, visiting in Rome, attended this final session and addressed the assemblage. He indicated appreciation of the International Dairy Congress, the International Dairy Federation, F.A.O., and others for assistance in helping improve the dairy industries

of the less well developed countries.

The Secretary General, Dr. G. Pittoni, announced the winners of the propaganda films and the poster exhibits.

Sir Thomas Peacock, Chairman of the Great Britain delegation to the Congress, extended on behalf of Her Majesty, Queen Elizabeth of Great Britain, an invitation to hold the Fifteenth International Dairy Congress in Great Britain in 1959. He then indicated that the officers of the International Dairy Federation had acted favorably on this invitation.

The recommendations of the Congress were presented by the Secretary-General and approved unanimously. The Congress was then declared closed.

Recommendations Approved by the Fourteenth International Dairy Congress

Section I

1. There is, in almost all countries, room for increased per-capita consumption of milk in liquid form to supplement the amounts of essential nutrients in the dietary. Further advertisement of liquid milk on nutritional grounds is to be strongly recommended.

2. All sections of the dairy industry must pay greater attention to the maintenance of the nutritional quality of liquid milk at all seasons of the year.

3. Modern conditions of liquid milk distribution emphasize the importance of:
   (a) The dairy laboratory, which should play a central part in the work of every modern milk distribution and processing plant.
   (b) The standardization of milk bottles and crates, and the possible replacement of bottles by non-returnable containers.
   (c) Better education and training for all those entering the industry.

Section II

The need is emphasized for:

1. Better methods for disseminating scientific information to the dairy industry.

2. Improvement and control of quality of milk used in the manufacture of dairy produce.

3. Improved physical and bacteriological methods for developing flavor in dairy produce.

4. Improved efficiency in dairy plants through the increasing adoption of mechanization.

5. Control of operational efficiency by greater use of adequate factory records leading to the development of effective cost-accountancy.

6. Greater and more enlightened publicity to secure increased consumption of butter and cheese.

7. Greater cooperation between the medical profession, human nutritionists and the dairy industry, to achieve and maintain full and sympathetic understanding.

Section III

Taking into account the facts that dairy products:

(a) In many countries should be consumed in larger quantities;

(b) Must be kept in store when they cannot be sold at normal market price;

(c) In some countries, provide as export commodities a large percentage of national income;

(d) Meet competition from products that do not contain butterfat or other fat than butterfat;

the following measures are recommended to increase international trade in dairy products:

1. The reduction of legislative and other restrictions, and of taxation handicaps on dairy products intended for import and export unless health reasons, or reasons of national economy of the dairy industry affecting the prosperity of agriculture and dairying, necessitate such restrictions.

2. The cessation of dumping of dairy products, with due consideration to any necessary export to countries where consumption, still very limited, should be stimulated.

3. The terms "milk", "butter", "cheese" and those used for other milk products should, by international agreement, be protected in such a way as to prevent the consumer or buyer from being misled.

   An international convention on the lines now being considered by I.D.F. and F.A.O. would appear to provide a most desirable means for implementing the foregoing recommendation. Moreover, in the interest of consumers and of international trade, the aim must be to obtain within the framework of the International Convention, more uniform standards of definition, composition and hygiene.

4. Legislation concerning the dairy industry ought to be framed to suit national conditions. After being examined by experts representing all the different aspects, such legislation should contain only requirements which are simple in interpretation and application. The importance of hygienic composition and of payment for milk according to quality should be emphasized in dairy legislation. The importance of information and advisory services should also be emphasized.

5. The standardization of methods of sampling, evaluation and analysis is of particular importance, as it gives the opportunity of obtaining not only more uniform and more exact results, but also of preventing difficulties that might arise in international trade from results which are not comparable. The standards already accepted by the International Dairy Federation should, therefore, receive international recognition as soon as possible.

SUMMARIES OF CONFERENCES

1. The position of the milk industry in the national economy - Prof. P. Albertorio, Director General, Office for Economic Protection of Agricultural Products, Rome, Italy.

In discussing this subject the author tried to summarize the position of the milk industry in the different parts of the world. He pointed out that statistical data varied greatly from country to country, thus making it difficult to arrive at a firm figure for the world's production. In 22 leading dairy countries, which are estimated to produce more than 60 percent of the world's output of milk, the production amounted to more than 372 billion pounds in 1955. The author estimated that the world output of milk is close to 600 billion pounds.

The value of the milk produced in the world is estimated to fall in second place among agricultural commodities, being exceeded only by all meat produced and followed by all wheat produced.

The per-capita production and the consumption vary widely for different countries. For 17 of the leading dairy countries the per-capita consumption on a milk equivalent basis was 722 pounds in 1955, whereas the world average consumption is more nearly 225 pounds. It was estimated that about 95 percent of the milk is consumed in the country where it is produced.

The problem of distribution of milk from countries of surplus production to those of deficient production was presented as one that all people interested in improving the nutritional status of the world's population should be concerned about. The author concluded by saying that in humanity's efforts to relieve hunger and improve eating habits and nutrition, an increase in the production and the consumption of milk and its products is greatly needed.

2. The provision in hot countries of a sufficient supply of milk particularly in relation to the milk-producing animal - cow, buffalo, sheep, goat - Mr. P. Vieira de Sa , Portugal

Summary

In the first part of his lecture the author apologized for separating the problems and special aspects of tropical dairying from those of dairying in general, and he considered that these special aspects ought to be dealt with in International Dairy Congresses as a special section dealing with the particular problems involved. He tried to distinguish between the type of dairy activity which can be defined as "European type" and another called "Tropical type", or better still "Hot climate type", in such a way that the essential fundamentals can be established in order to put into perspective the actual problems.

In finishing the first part, he referred to the dairy environments in the inter-tropical zone, distinguishing two completely different cases: (1) the equatorial climate and (2) the tropical and monsoon climates. In relation to these two distinct climatic types, the climates known as sub-tropical and sub-equatorial are considered as transition climates and the hot desert climates are considered as an exaggeration of the drought season and, thus, climatic condition changes occur with more or less accuracy according to their proximity to more typical climates.

In the second part of his lecture, the author discussed

whether the title of the paper suggested for his talk is indeed the most appropriate, and he concluded--based on the climatological environments of the inter-tropical zone--that this title could advantageously be replaced by another, more general and better adapted to all the conditions under which dairy problems of the tropical zone (Zone of Koppen) must be faced. This new title would be "Problems which must be solved in order to guarantee a more reasonable production, a more lucrative utilization, and a more generalized consumption of milk in the tropical zone (Koppen)".

Within this criterion he established the basis of the problem, either in the case of conditions under an equatorial climate, or in the case of conditions under tropical and monsoon climates; afterwards he sought the solutions he considered more adequate to each case. Thus, for equatorial climates, particularly extra (ordinarily) adverse to milk production, he thought that generally speaking it is not advisable, from the economic point of view, to strive towards any industrial dairy development, reducing the problem to that of milk supply to populations, namely to populations living in towns. These populations, he emphasized, can only be supplied either with imported powdered milk which, ideally, should be distributed after being either reconstituted, or "toned", and treated in dairy plants; or through imported milk livestock, periodically renewed and kept under the best conditions to safeguard them against the climate and disease. However, he pointed out that this latter solution is rather expensive and could only be considered in cases where individual income is such that the higher cost of milk that would result could be justified, or when the difference between selling price and actual cost can be met by subsidies. Of course native breeds can also give milk but the yields of these animals are generally so low that it is quite insufficient for large-scale programmes of milk supply to town populations.

In the case of tropical and monsoon climates, where regular and even very good conditions of milk production can be found, he presented as a first problem-apart from the obvious aspects of sanitary conditions--the difficulties created by the existence of a drought period, more or less extended, which leads to variations of production of disastrous consequences for normal dairy activity and economy of countries in these climates. The state of development of dairy activity in these regions must go hand-in-hand with the avoidance or remedying of the harmful consequences of the drought season; the success or otherwise of the state of development

will measure with great accuracy the technical and economic development of the country.

The author enumerated then the hygiene, transport and milk treatment problems which are important too, affecting to a large degree the economic viability of dairying under the quoted conditions. Hygiene costs money, he stressed, and thus it cannot be reasonably and satisfactorily practiced while the volume of milk to be treated is not great enough to cover the cost of the desired practices.

Transport or means of communication, generally speaking, are very defective in many hot countries that are underdeveloped, and this is another great obstacle to dairy development, the solution to which, however, must always be sought with practical possibilities in mind.

Approaching the problem of milk processing, he discussed parallelly the advantages and disadvantages of the most common processes, pasteurization and sterilization. Cooling is also discussed in general.

On the same subject he discussed still another form of milk processing, namely the H_2O_2 plus catalyses process. He placed in strong relief the advantages and disadvantages of this method and outlined the attitudes of experts of several countries relative to its acceptance.

He concluded this second and last part by referring to livestock which constitute sources of milk production in this zone of the globe and, before ending his conference, he appealed that the next International Dairy Congress should have a separate section on Tropical Dairying, oriented so that it will present a picture of the actual scientific and economic situation in this special aspect of dairying, and so that it will be a guide for its future development.

3. Effective and controlled use of surplus dairy products - A. H. Boerma, Director, Economics Division, F.A.O., Rome

Summary

The basic need for effective disposal is to ensure that the surpluses go into "additional" consumption. Otherwise they may largely displace other sources of supply and thus load to little or no improvement in consumption. The finding of

"additional" consumption is thus the central issue.

The present arrangement of the international market for dairy products, together with the fact that dairy surpluses have mainly accumulated in an area of high-cost production, means that low-consumption areas appear to offer the best outlets for surplus dairy products.

In low-consumption areas, however, it is of paramount importance to ensure that the development of dairying is not hampered by surplus disposal. This is because dairy development is so greatly needed in these areas where dairying is mostly beset by great initial difficulties so that development is particularly slow and susceptible to setbacks.

The growing appreciation of this need for caution is reflected in the increasing emphasis being placed--both by countries holding surpluses and by potential recipient countries--on the need for careful control of surplus disposal and the integration of surplus disposal into a broad program of dairy development. This involves--as a basic preliminary step--the working out of a long-term dairy development program into which is integrated the use of surpluses.

One important result of recent work in this field has been the realization that to make effective use of dried skim milk, in particular requires assistance in the establishment of modern dairy plants. Consequently, the idea of "international cooperative action" by countries exporting dairy products is now taking practical shape. This action, by providing a broad form of assistance, is an important and encouraging step forward. It ensures effective and controlled use of surplus dairy products and--at the same time--stimulates dairy development and improvement in low-consumption areas.

The broad conclusion emerges that surplus dairy products, when properly disposed of, can have substantial beneficial results.

It is to be hoped that by this--and similar action--the efforts to raise consumption of milk and milk products throughout the world will continue to gain ground.

This is then a truly intergovernmental and multilateral scheme, whereby Governments, under FAO auspices, cooperate to

make effective use of surpluses. The story, however, would not be complete if reference were not made to bilaterial schemes, especially those of the United States, in which private industry participate.

Section I - Milk for Liquid Consumption

H. D. Kay (Great Britain) Chairman; K. Schirmer (W. Germany); D. N. Khurody (India); A. Del Pio Perez (Spain); S. Cramorossa (Italy), Vice Chairman; and J. A. B. Smith (Great Britain), Secretary.

Subject 1 - The collection of milk from farms and small collecting stations having particular regard to environmental conditions, to size and accessibility of herds, transport problems, etc. - A. Zeilinger (Austria) reporter.

Thirty-seven papers were included in this subject. The information presented indicated that proper sanitization of equipment used in handling and holding milk on the farm, improved refrigeration, increased knowledge by producers of the causes of deterioration of milk, and improved transport of milk from farm to factory are responsible for great improvement in the quality of milk received by dairy plants. Adoption of the mechanical milking machine, and more recently of the in-place pipe line milking systems, together with mechanical refrigeration and bulk storage tanks for holding milk at low temperatures, have all had significant impact on improving keeping quality, flavor and nutritional value of milk. Delivery of milk by individual farmers to plants is giving way to use of receiving stations and more particularly to bulk milk transport systems, thus enabling the collection of milk less frequently and the movement of milk over much greater distances from farm to market. Attention was given to physiological responses of cows to milking techniques, the relation of interval of milking to yield,and improving methods of milking. The need for more effective training programs and greater incentive for attracting students to careers in the dairy field was indicated.

Subject 2 - The planning and management of dairies processing milk for liquid consumption - G. Winberg (Sweden) reporter.

Twenty-six papers were included in this subject. Considerable attention was given to the planning, location, and improving the efficiency of operation of milk processing and

bottling plants. Accessibility to consuming and producing areas, availability of power, water, disposal facilities, and transportation are all considered important points in selecting a site for the plant. Plant layouts, arrangement of equipment and freedom from possibilities of contamination of milk and its products are important considerations. Considerable attention was given to the importance of proper sanitizing equipment, both on the farm and in the factory, both with steam but especially with chemicals which are receiving increased acceptance.

The use of pasteurization, especially high-temperature, short-time pasteurization, is receiving increased acceptance. As a means of improving quality and increasing operational efficiency the increased dependence on laboratory and management controls, including more detailed accountancy control, was stressed. Improvement in managerial-employee relations is needed and increased employee education and participation in affairs of the plant operations are stressed. Improved equipment and fewer and more standardized equipment and containers used in processing and handling milk are needed in most plants.

Subject 3 - The distribution of liquid milk, in relation to type of milk, containers used, character of distribution area, consumers' preference, etc. - F. Procter (Great Britain) reporter.

Nineteen papers were included in this subject. In many countries the bulk delivery of milk to the consumer is giving way to delivery of pasteurized, sterilized or raw milk in bottles and paper cartons. In some countries, as in the U. S., there is increased use of large type containers, such as two-quart and gallon jugs. The increased use of the aluminum cap on milk bottles has added greatly to the speed and economy of capping and to the appearance and use of the bottle. The size and shape of bottles and cartons differ greatly within and between countries. Efforts are needed toward standardization. The advantages of the use of non-returnable light weight paper containers were pointed out as was the fact that their use is increasing in many parts of the world, especially in the United States. The single use, tetra pack container is receiving considerable attention in northern Europe.

The use of sterilized milk in Europe continues to increase and is promoted as a means of extending the hygenic and nutritional quality of milk. Homogenization of milk is also increasing in popularity by consumers.

The delivery of milk is changing from horse-drawn to power-drawn vehicles and the home delivery of milk in containers is

increasing.

Subject 4 - The effect of different types of modern processing on the nutritive value of liquid milk - L. Randoin (France) reporter.

Thirty papers were included in this subject. The variation in the chemical composition of milk because of numerous environmental factors was emphasized. It was pointed out that much of this could be controlled by more adequate and uniform feeding regimes. The variations in total solids and solids-not-fat can be accounted for largely by variation in feeding. These variations affect the nutritional value. Treating milk by heating to safeguard sanitary quality does not necessarily affect nutritional value, although biological values can be influenced by treatment in the preparation of milk for marketing. It was pointed out that contamination with iron and copper produced deleterious oxidative effects on milk that adversely affect flavor and the content of riboflavin and ascorbic acid; hence the importance of using equipment free of these metals. Exposure to light also adversely affects the content of these nutrients and in this respect paper cartons are preferred over clear glass bottles for marketing milk.

The problem of contamination of milk with insecticidal residues and antibiotics as a result of their use in production may possibly present a human health hazard to users of milk. Because of this possibility, great care must be exercised in keeping such substances out of the public milk supply. It was concluded that as new methods and procedures are developed and introduced in treating milk, care must be taken to assure that the techniques used do not impair the nutritional value of the milk.

Subject 5 - Various forms of utilization of milk and cream - P. Solberg (Norway) reporter.

Twenty-six papers were included in this subject. They covered a wide field of milk utilization. The main topics dealt with were modified milks, sterilized milks, evaporated milk, cream, ice cream, sour milk, and dehydrated whole and skim milks. A method for producing powdered cream containing 80 percent fat and its use were described. A method for producing a stable vitamin A fortified non-fat-dry milk was also described. Increasing the use of milk through production of armatized milks (chocolate milk drinks) in Europe was described. The use of

milk solids as a basis for medicinal preparations was reported to offer possibilities in some areas.

Considerable emphasis was directed toward the improvement in the quality and increased production and promotion of ice cream in all parts of the world as a means of increasing the consumption of milk solids. A process for making a refreshing milk drink by carbonating sour milk products with carbonic acid, resulting in a sparkling champagne-like beverage, was described. A delectable, non-alcoholic beverage made by refining liquid whey was also described. A greatly increased acceptance by the public in all parts of the world for non-fat dry milk was reported.

Subject 6 - The assessment of the cost of producing, processing, and distributing various types of milk for liquid consumption - A. J. Hannerty (Ireland) reporter.

Sixteen papers were included in this subject. The proper assessments of the costs within a plant of producing various milk products has been sadly neglected in many countries. Such assessments are needed to improve operational efficiency. Various systems in use and found acceptable were presented and discussed. In this respect, job simplification and coordination of duties in different departments of work are important. Effective accountancy is essential through plant processing to assay costs and reduce the expense of preparing milk and milk products for marketing. Individual cost items for various products produced in a plant are essential to arrive at a price for milk that is to be paid the producer as well as for pricing milk and its products to the consumer. In all costs of processing milk, transportation continues to command an increasing proportion of total costs. In most countries governmental pricing regulations are reckoned with in the fixing of costs.

Several papers dealt with, and pointed out, the difficulties of appraising accurately the cost of milk production on farms.

Subject 7 - The position of milk as an article of diet in various countries, together with methods for increasing liquid milk consumption - K. L. Devriendt (Belgium) reporter.

Twenty-six papers were included in this subject. Surveys of the consumption of milk and its products throughout the world indicate that for optimum nutrition all people should consume more of these products. This is especially true in the less well developed countries where a deficient local supply exists. In respect to per-capita consumption, the U. S. stands thirteenth

among the nations of the world. Increased consumption must be obtained through improvement in quality, through maintenance of attractive prices in terms of value and the cost of other foods, and through increased educational and propaganda work. The school lunch and milk programs are most effective in obtaining new users and developing larger consumers of milk. Research into the nutritional value of milk and its supplementary value in the diet to provide essential protein, minerals and vitamins is emphasized. Educational and propaganda programs, including working with schools and similar groups, and the use of printed advertisements, radio and television, are recommended. The problem of low consumption in the tropical countries and the getting of milk nutrients to these people were much discussed.

Several papers were included that dealt with the basic composition of milk and the content of various vitamin and other nutritive constituents, thus significantly adding to the general knowledge of the nutritional value of milk.

Section II - Dairy Products - Technical and Economic Problems

A. M. Guerault (France); I. A. Gould (U. S.); J. W. Pette (Netherlands); C. J. MacDermott (Australia); D. Miraglia (Italy) Vice Chairman; and E. Capstick (Great Britain) Secretary; F. H. McDowall (New Zealand) reporter.

Subject 1 - Technical problems of buttermaking - F. H. McDowall (New Zealand) reporter

Fifty-three papers were included in this subject. In spite of the inroads that other fat products have made on butter consumption, this product continues to be a major and important source of food energy and vitamin A. The per-capita demand for butter is strengthening in many areas. Improvements in technology of production and manufacture to improve the quality of butter was stated to be a means of increasing demand. In this respect the relation of seasonal changes in the composition of butterfat and the effect of feeding on these changes to the composition of butter and the butter manufacturing procedures were discussed. The production factors in producing cream that result in poor flavor and deterioration in quality of butter were given great attention in a number of papers. In dealing with the nature of the protein material absorbed on the fat it was reported that this protein was either lactoglobulin or a

protein very similar to it. The subject of deodorization of cream as a means of maintaining and improving flavor, either by aeration or by vacuum degassing, was discussed, and the limitations to the use of these methods pointed out. The physical properties of butter and its improvement were given considerable attention. The methods of churning and working the butterfat, as well as the procedures used in washing and removal of butter from the churn, all have an important influence on the resulting physical characteristics, flavor and quality of the butter. The contamination of cream or butter with copper or iron was found to have a deleterious effect on the quality and keeping value of butter. There was general agreement that the most progress in advancing the use of butter could be obtained by increasing its quality and flavor. Butter made from sweet cream generally has superior keeping quality.

Subject 2 - Various aspects of the relation of butter to other fats used for human consumption - J. J. Walker (New Zealand) reporter.

Eight papers were included in this subject. Comparative consumption statistics for butter and other fat foods for different countries were presented and evaluated. Technical problems in the production of high quality butter were discussed. The need for reinvestigation of the true nutritional value of butter and its various fat constituents, and particularly the physiological aspects of fat acceptance and utilization were indicated. The problem of cholesterol level in the blood and the relation of butter and other fats to the incidence of atherosclerosis were discussed in detail. It was recommended that special research attention be given to the possible relation of high fat diets and of animal fats, particularly to the occurrence of degenerative heart diseases and to arteriosclerosis. Recent work reviewed suggests that the fatty acid composition of the fat and not its orgin may be the major factor in determining the effect of fat in the diet on the cholesterol content of the blood, and hence on possible cholesterol deposition in the arteries.

Subject 3 - The assessment of butter production costs - S. O. Hilding (Sweden) reporter.

Six papers were included in this subject. A wide range of cost items was discussed in the papers. It was indicated that a cost accounting adapted to suit the size and methods of operation of the dairy is a prerequisite, both for cost control and for price, earning power and production calculations. Various methods of cost accounting in use in different countries were discussed. It was demonstrated that accounting for the costs incurred in various plant

processes and at the departments in which they arise help to make dairy people cost-conscious to the end that production costs can be reduced. It was recommended that the International Dairy Federation establish a working group to work out a system of cost accounting based on dividing the plant operations up into cost place so that plant managers can make comparisons effectively of costs and cost assignments.

Subject 4 - Technical problems of cheese making - E. Locatelli (Italy) reporter.

Sixty-four papers were included in this subject. These papers covered a wide range of technical and related problems of cheese manufacture. The need for increasing the tempo of the application of technical knowledge in commercial cheese production received considerable attention. This can be accomplished by a fuller exchange of scientific communications among scientists and technical workers and particularly in respect to plant laboratory technicians and workers.

A fundamental aspect of making high quality cheese is to first have available high quality milk produced, maintained and transported to the factory under the best possible sanitary conditions. The making must proceed under similar sanitary conditions with methods and procedures that favor desirable fermentation to bring about proper ripening. The need for improved methods that save labor was stressed. The semi-continuous method of cheese manufacture developed in the U. S. and in use in several countries was reviewed.

Discussion bore out the need for increased attention in developing fuller use of cheese as an important food; also the following points: the important place that composition and flavor quality of the milk has to the character and quality of the resulting cheese; the need for improvement and standardization of methods of manufacture among different plants making the same kind of cheese; the comparative nutritional value of different kinds of cheeses; improvements in the methods of merchandizing and advertising cheese.

Subject 5 - The assessment of cheese production costs - S. Hartmans (Netherlands) reporter.

Twelve papers were included in this subject. These communications dealt with need for and the difficulties in obtaining satisfactory cost estimates in the production of cheese, but the

need for such estimates in efficient cost accounting and pricing of milk and cheese is important. Problems dealt with were the proper assay for cost of manufacture of different types of cheese; the different circumstances under which cheese is made, such as in factories where cheese is the only product compared to plants where cheese is one of several products made; the volume of production; location of plant in respect to supplies and markets, etc. It was indicated that better results could be obtained by expressing costs on a per unit of milk basis rather than on a per unit of cheese basis.

Subject 6 - Butter and cheese as articles of diet in various countries, together with methods of increasing their consumption - P. Koch Henriksen (Denmark) reporter.

Ten papers were included in this subject. In these papers it was shown that butter and cheese have long been important items in the diet and that the largest per-capita consumption is to be found in countries outside of the warmer climates. Per-capita consumption has been increasing particularly for cheese since World War II. The U. S. per-capita consumption of these products, especially cheese, is low but is showing a slow, steady increase. It was shown that less man hours of work are required today than formerly to equal the cost of a unit of butter or cheese, and this should favor increased consumption. The trend in the percentage of food costs going for butter and cheese was shown to be downward. Milk and cheese were shown to be a low-priced source of protein. This is important since in many countries protein is scarce in many diets.

In efforts to increase consumption consideration should be given to economic possibilities of the nutrients in butter and cheese, on quality, flavor and eye appeal of these products. Research, education and advertising, utilizing all available media, offer the best opportunities to increase the use of these important foods.

Section III - Legislation, Control, Methods of Analysis

P. Kaestli (Switzerland) Chairman; M. Sode-Magensen (Denmark); G. Sjastrom (Sweden); K. Johns (Canada); M. Scapaccino (Italy), Vice Chairman; and F. Zafarana (Italy), Secretary.

Subject 1 - International trade in dairy products - H. L. Forest (USA) reporter.

Five papers were included in this subject. Although about 95 percent of world milk production is consumed in the countries in which it is produced, there are countries which have substantial exports of dairy products and whose export trade is a major source of their national income.

In those countries where the production of manufactured dairy products for export is an important factor in their total economic activity, changes in world trade opportunities are felt keenly and immediately.

In other countries milk production is an important domestic enterprise but export trade is relatively unimportant except in periods when domestic consumption is less than the total milk produced in the country. In carrying out disposal programsunder such circumstances the disposition of surplus stock should be made with care in order to avoid disturbance in normal world markets. The United States Government in its endeavor to handle surplus disposal so that there would be no disturbance of world trade has emphasized the development of new and additional markets. Concern was indicated by members of countries with a historically large export of dairy products of the U. S. disposal methods of surplus products, which they felt arise from domestic subsidy programs. However, the U. S. practices were defended by those from importing countries receiving the benefit of U. S. dairy exports.

In most countries the increased use of milk in fluid form is continuing. Fluid milk use in 1955 in 17 of the 18 primary producing countries was almost one-third more than during the prewar period. This is substantially greater than the estimated 20 percent gain in population between prewar and 1955. The gain in fluid use in 1955 over 1954 was made at least partially at the expense of butter and cheese production which were both lower in 1955 than in 1954.

Some surpluses are likely to continue at least in the immediate future. These surpluses, wherever located, have a depressing influence on world dairy prices. Increasing consumption and expanding markets are worldwide problems, and cooperative planning among all nations is needed to assure that market developments promote the welfare of all.

It was suggested that efforts be made to standardize the definitions of butter and other products throughout the world. The relation of high protective tariffs to consumption of dairy products was questioned. The world output of milk was put at 600,348 million pounds, or 244 pounds per person, in 1953.

Subject 2 - National legislation and international conventions concerning cheese - O. Langhard (Switzerland) reporter.

Four papers were included in this subject. Among the communications there was a recommendation that there be developed well-defined regulations controlling cheese production and trade. Such regulations exist in most countries on a national basis. An international cheese convention for this purpose was held at Stresa in 1951 under the auspices of the International Dairy Federation but its objectives have not yet been achieved through the adoption of its recommendations by all countries. Eight countries have adopted these recommendations. The convention makes possible the setting of standards and nomenclature for cheeses of different catagories.

Subject 3 - Milk legislation in various countries - W. A. Lethem (Great Britain) reporter.

Sixteen papers were included in this subject. Legislation varies considerably in different countries. Much of it dates from before the days of bacteriology. There is often some confusion of thought about what the law is trying to do. The "four freedoms of milk" are discussed--freedom from infection, freedom from dirt, freedom from adulteration, and freedom from acidity. As unrecognized carriers of infection are common, it is suggested that only pasteurized or sterilized milk should be considered safe. Boiling at home cannot be relied on.

Milk grading seldom takes into consideration anything more than fat content. An official keeping quality of freshness test is sometimes wrongly thought to be a test of safety. Failure to pass a prescribed test should be looked on rather as an indication of some error in handling than as a fault in itself. The emphasis is changing from the construction and condition of the buildings to the methods of handling, sterilization of equipment, cooling and transport. Governments are paying more attention to the control of cattle infection. Much improvement can result from trade agreements and the payment of differential prices. An advisory service is recommended as of primary importance. Profit is the greatest stimulus to progress. Governments can help the trade to greater profits in several ways. Any payments made should depend on safety and quality rather than on quantity alone. A subsidy is sometimes paid towards the cost of heat treatment to keep the price low, and for milk from disease-free herds. All milk considered fit for immediate consumption should be safe. Regulations must be enforceable, which is not possible if they do not have the support and willing

cooperation of most of the trade. Consequently, before being put into force, they should be discussed at length with all the parties concerned.

Subject 4 - The organization of the control of quality of dairy products - M. Hietaranta (Finland) reporter.

Twenty-three papers were included in this subject. The subject in question dealt with the organization of the control of quality of dairy products. The control of quality is divided into three main groups: official control, private control and inner control. They include aspects concerning the composition, sanitary conditions, hygiene, as well as general demands for quality. Both the official control and private control are organized in a very different way in different countries, depending on the different level of dairy industry and general conditions in those countries. On the contrary, the inner control is, especially with regard to pasteurized milk, of the same nature in different countries because the hygienic demands are more or less uniform.

In addition, the subject dealt with the question of to what extent the official control regarding the consumption milk should be carried out. Finally, it was suggested that the total question under discussion be dealt with more in detail in the future item by item when the international forum can yield more fruitful results and advance the progress in different countries.

Subject 5 - The standardization of methods for milk analysis - G. Schwarz (Germany) reporter.

Seventy papers were included in this subject. Reports were given as to how methods of analysis usual or already adopted as standard progress in several countries.

Works were reported dealing with the estimation of fat content in milk and milk products according to the different usual methods. Investigations reported about milk solids-not-fat, formol titration, casein estimation by means of refractometry, fat-content adjustment of the milk with cheese making, determination of water content in cheese, detection of iron and copper in milk and milk products, estimation of sodium-bisulphite in milk samples when milk proteins are involved, evidence of colorings in fats and oils, detection of watering and the relationships between the values of the physical and chemical numbers in butter and margarine.

Papers relating to the proper heat treatment considered the

accuracy of various phosphatase tests, while the problem of reactivation of the phosphatase was subjected to close scrutiny.

Other discussions dealt with the crystallization of beta-lactoglobulin, the catabolism of sugars and the hydrolysis of fat in ripening cheese, the oxidation of butterfat and the separation of the constituents of casein.

Other contributions were concerned with how physical investigation methods may be applied to the measurement of the size of particles in normal milk and in reconstituted skimmilk as well as the influence of dilution and homogenization on the whiteness effect of concentrated milks.

The bacteriological reports dealt with problems regarding the suitable composition of different nutritional substrata in order to determine the numbers of bacteria in milk and with solvents for dried milk, the simplification of bacterial control methods, the growth of Clostridia and the isolation of certain lactic streptococci.

Further subjects were concerned with the bacteriological condition of milk and milk products, the measurement of the keeping quality of milk, the difficulties experienced with bacteriological cheese testing, the examination of the state of cleanliness of the transportation cans and milk bottles as well as the picture given by dye reduction tests.

Reports followed finally with treating comparative studies between normal and mastitis milk; the use of the ABR-test (epizootic-abortion-ring test to fight Brucellosis) and methods proposed up till now in the Federal German Republic as being official tests for determining pathogene microorganisms were mentioned.

All these reports pointed to the conclusion that many people are eager to improve the simplicity and the accuracy of analytic methods in use in the dairy industry.

OBJECTIVE APPRAISAL OF WORK AND ACCOMPLISHMENTS OF THE CONGRESS

In view of the fact that there were 451 papers submitted for inclusion in the Congress proceedings, an enormous amount of

subject matter material was covered in the reviews and discussions of the technical program. In this respect a common criticism among the members of the U. S. delegation was that the agenda of the program was so broad that the only result possible was a generalization of subject matter. The recommendations approved by the Congress membership, and referred to earlier in this report, certainly are such that they could be subscribed to by the U. S. delegation and by the American dairy industry.

The International Dairy Congress is described as a technical scientific congress. The tendency of the programs of the congresses in recent years, however, has been to broaden the agenda and to include much more of the economic, regulatory and trade problems of the international dairy industry. There is criticism on the part of some Americans, as well as individuals from other countries, particularly among the scientific group, that the congress is becoming less of a dairy science congress. The main presentations and discussions dealt with broad, general problems of more concern to representatives of milk producing and processing organizations such as plant managers. From the standpoint of the congress itself, there was too little presented that was of interest to the scientist, and much of the material was at the elementary level.

It should not be construed that the agenda material is not important subject matter for discussion at the international level. However, the question must be raised as to whether this congress should continue to be billed as a scientific technical congress or one that deals with general subjects of production, manufacture, economics and trade of major interest to industry, management and governmental regulatory bodies. Certainly if the scientific aspects are to remain an important part of the congress, something must be done to renew and enlarge the interest of dairy research workers in various parts of the world. There are indications that the International Dairy Federation intends to do something about this matter. The apparent lack of interest in this congress by American dairy scientists is indicated by the small number of papers submitted (only 25). It can be observed also that the trend in the delegations from the United States, as well as from other countries, has been to include fewer scientists and more commercial industry representatives with each succeeding congress.

This is not intended to be a criticism of the importance

of the material presented and the representations to the congress. Much good resulted from the discussions that took place and a better understanding of world problems resulted. One of the great values of the congress meetings is the personal contact that delegates make and the exchange of ideas that takes place through such discussions. In this respect the United States delegates perhaps made their most valuable and effective contribution. The full and effective participation that delegates made during the several formal subject matter discussions contributed effectively to the exchange of knowledge.

The dairy industry in the United States operates under a wide variety of conditions, but conditions throughout the world vary to a much greater extent. Some of these conditions are differences in climate and in sanitation, and in technological and commercial practices. As a result, American delegates had difficulty understanding the significance of some discussions.

The attention that the International Dairy Federation is giving to problems of dairying in tropical countries is of special interest to the United States. Development of the dairy industry in these countries will open new markets for dairy products, dairy equipment, and breeding animals. It was apparent that the countries of Western Europe must depend greatly on exports of agricultural commodities, including dairy products, to maintain a favorable trade balance, and they hope to obtain as much as possible of this potential market. The United States also exports large quantities of agricultural commodities and could export more of its dairy products to tropical countries. Specialists in the United States can contribute much to the Congress program in this area.

RECOMMENDATIONS CONCERNING FUTURE CONGRESSES

The United States delegation recommends strongly that this country has much to gain by being represented at future International Dairy Congresses. Aside from the benefits to be gained by exchange of ideas on numerous technical and practical subjects relating to the dairy industry, the mutual respect and understanding that can be gained from direct contact with people from many nations who have a common interest in an industry such as the dairy industry, can hardly be exaggerated.

Participation may depend somewhat on this country's possible

future relationship with the International Dairy Federation. In the past the United States has sent an official Governmental delegation to participate in the Congress as guests of the Government of the country in which the Congress is held. If, as a result of the studies currently under way among industry groups in this country, they or the Government should take out membership in the International Dairy Federation, a direct avenue for closer participation and representation in the Congress, as well as in other affairs of the federation, will exist. In any event, the delegation feels that the Government of the United States should continue to have representation at future Congresses.